New England Bioassay

A Division of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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NEW ENGLAND BIOASSAY A DIVISION OF GZA
CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee: Patriot Beverages NPDES # MA0004936
Report submitted to: 20 Harvard Road
Littleton, MA 01460
Sample ID: Outfall 001
Test Month/Year: January 2019
NEB Proj # 05.0044697.00

Test Type / Method: *Pimephales promelas* Modified Chronic Static-Renewal Freshwater Test Method 1000.0; EPA 821-R-02-013

Effluent Sample Dates: #1 1/13-14/19 #2 1/15-16/19 #3 1/17-18/19

Test Start Date: 1/14/19

Results Summary

Your results were as follows:

Passed all permit limits

Acute Test Results

Species	LC50	A-NOEC	Permit Limit	Pass / Fail
Pimephales promelas	>100%	100%	≥ 100%	Pass

Chronic Test Results

Species	C-NOEC	C-LOEC	IC25	Permit Limit	Pass/Fail
Pimephales promelas	100%	>100%	>100%	≥ 91%	Pass

Data Qualifiers affecting this test:

Certifications & Approvals: NH ELAP (2071), NJ DEP (CT405)

Test Report Certification

Permittee name:	Patriot Beverages	Permit number:	MA0004936
Client sample ID:	Outfall 001	Test Start Date:	1/14/19

Whole Effluent Toxicity Test Report Certification (Permittee)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: _____ (Date)

_____ Authorized Signature

_____ Print or Type Name and Title

_____ Print or Type the Permittee's Name

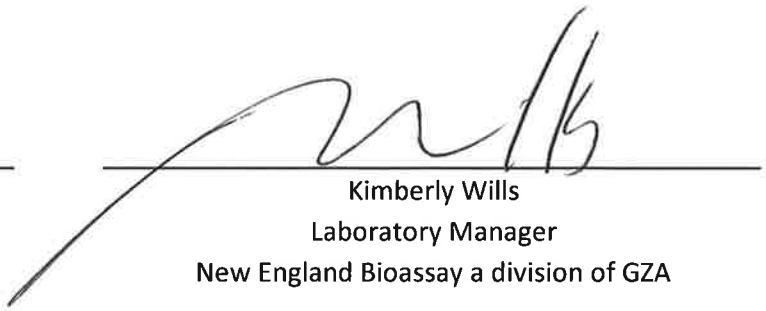
MA0004936 Print or Type the NPDES Permit Number

Whole Effluent Toxicity Test Report Certification (Bioassay Laboratory)

The results reported relate only to the samples submitted as received

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 2/6/19 (Date)



Kimberly Wills
Laboratory Manager
New England Bioassay a division of GZA

General Test Conditions

Permittee name: Patriot Beverages | Permit number: MA0004936

Client sample ID: Outfall 001 | Test Start Date: 1/14/19

Sample Collection Information

Effluent #1 Dates/Times: 1/13-14/19 @ 0700-0730 | Receiving Water #1 Date/Time: 1/14/19 @ 0700

Effluent #2 Dates/Times: 1/15-16/19 @ 0700-0700 | Receiving Water #2 Date/Time: 1/16/19 @ 0730

Effluent #3 Dates/Times: 1/17-18/19 @ 0700-0700 | Receiving Water #3 Date/Time: 1/18/19 @ 0730

Were a minimum of three samples collected? Yes ☑ No ☐ *(see note below)

Were samples used within the first 36 hours of collection? Yes ☑ No ☐ * (see note below)

* sample collection note:

Test Conditions

Permittee's Receiving Water: Reedy Meadow Brook

- Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)
- Control water: Receiving water collected at a point immediately upstream of or away from the discharge

Effluent concentrations tested: 0%, 6.25%, 12.5%, 25%, 50%, 91%, 100%

Was effluent salinity adjusted? No ☑ Yes ☐ with Instant Ocean sea salts to _____ ppt

Dechlorination procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method

- Dechlorination was not required

Aeration: Did Dissolved Oxygen levels fall below 40% saturation? Yes ☐ No ☑

Test Aerated at <100 bubbles/minute as of: _____

TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"

Reference Toxicant Data

Fathead minnows

Date:	1/2/19
Toxicant:	Sodium chloride
Dilution Water:	NEB Soft Water
Organism Source:	NEB
Growth IC25:	1.33 g/L
Results within range	Yes ☑ No ☐

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 1/14/19 - 1/21/19

Test Acceptability Criteria

Lab Diluent Survival:	85	%	Mean Lab Diluent Growth:	0.52	mg
Brook Control Survival:	100	%	Mean Brook Control Growth:	0.56	mg
Thiosulfate Control Survival:	NA	%	Mean Thiosulfate Control Growth:	NA	mg

Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Results

		Permit Limit	Test Result	Pass/Fail Status
Acute Data	48 hr LC50	≥ 100%	>100%	Pass
	48 hr NOEC		100%	
	TUa			
Chronic Data	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
	Growth C-LOEC		>100%	
	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability

Growth PMSD: 14.7% Upper & Lower EPA bounds: 12 - 30% ☐ Low ☑ Within bounds ☐ High

☐ PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC)

☐ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.

☐ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent difference (RPD) between the control and each treatment was calculated and compared to the lower bound.

- ☐ The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
- ☐ Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
- ☐ No statistically significant reductions were observed in this test.

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 1/14/19 - 1/21/19

Concentration - Response Evaluation

Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.

Growth: #12 No significant effects at any test concentration with a relatively flat concentration-response curve. Test concentrations performed both above and below (but similarly to) the dilution control.

The concentration - response relationship was reviewed and the following determination was made:

Survival	Growth	
X	X	Results are reliable and reportable
		Results are anomalous (see explanation below)
		Results are inconclusive - retest (see explanation below)

Results Discussion (if applicable):

TEST METHODS

Pimephales promelas

Test type:	Modified Chronic Static Renewal Freshwater Test
Test Reference Manual:	EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms"
Test Method:	*Pimephales promelas* Survival and Growth Test - EPA 1000.0
Temperature:	25 ˚C ± 1˚C (Temperatures should not deviate by more than 3˚C during the test) (required)
Light Quality:	Ambient Laboratory Illumination (recommended)
Light Intensity:	10-20 µE/m2/s, or 50-100 ft-c (recommended)
Photoperiod:	16 hours light, 8 hours dark (recommended)
Test chamber size:	600 mL (500 mL is recommended minimum)
Test solution volume:	250 mL (recommended minimum)
Renewal of Test Solutions:	Daily (required)
Age of Test Organisms:	Newly hatched larvae less than 24 hours old (required)
Number of Organisms Per Test Chamber:	10 (recommended)
Number of Replicate Test Chambers Per Treatment:	4 (required minimum)
Number of Organisms Per Test Concentration:	40 (required minimum)
Feeding Regime:	Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient *Artemia* are added to provide an excess.
Cleaning:	Siphoned daily, immediately before test solution renewal (required)
Aeration:	None, unless DO concentration falls below 4.0 mg/L, at which point the rate should not exceed 100 bubbles/minute. (recommended)
Test Duration:	7 days (required)
Endpoints:	Survival and growth (weight) (required)
Test Acceptability:	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg (required)
Sampling Requirements:	Minimum of three samples with a maximum holding time of 36 hours before first use. (required)
Sample volume required:	2.5 L/Day (recommended)

PIMEPHALES PROMELAS
DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM
CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	*P.promelas* TEST ID #	19-75
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C39-1123-24
	Littleton, MA 01460	NEB PROJECT #	05.0044697.00
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Outfall 001
PERMIT NUMBER:	MA0004936		
DILUTION WATER:	Soft Synthetic Lab Water		

VERTEBRATES

TEST SET-UP TECHNICIAN:	CW
TEST SPECIES:	*Pimephales promelas*
NEB LOT #	Pp19(1-14)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C39-S001	48	35

	DATE	TIME
TEST START:	1/14/19	1400
TEST END:	1/21/19	1350

COMMENTS: _____

REVIEWED BY: _____ DATE: 2/6/19

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460						
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-75	COC #	C39-1123/24		
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(1-14)		
START DATE:	1/14/19	TIME:	1400	END DATE:	1/21/19	TIME:	1350

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	CW	TBP	MM	MM	KO	TBP	TBP	KO	
NEB Lab Synthetic Diluent	A	10	10	10	10	9	9	8	8	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	9	8	6	
Reedy Meadow Brook Control	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
6.25%	A	10	10	10	10	9	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
12.5%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
25%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	9	9	9	9	
	C	10	10	10	9	9	9	9	9	
	D	10	10	10	10	10	10	10	10	
50%	A	10	10	10	9	9	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
91%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

D.O. concentration fell below 4.0 mg/L _____

All test solutions were aerated at <100 bubbles/minute as of _____

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL
SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-75	COC #	C39-1123-24
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(1-14)
START DATE: 1/14/19	TIME: 1400	END DATE:	1/21/19	TIME:	1350

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	CW	TBP	MM	MM	KO	TBP	TBP	KO	
100%	A	10	10	10	10	10	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages | Test Species: *Pimephales promelas* | Test ID: 19-75

Test Date: 1/14/19 | Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 4 Observations			Date: 1/18/19	Technician: KO			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:	NF	Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:	F	Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day 5 Observations			Date: 1/19/19	Technician: TBP			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages | Test Species: *Pimephales promelas* | Test ID: 19-75

Test Date: 1/14/19 | Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 6 Observations		Date: 1/20/19		Technician: TBP			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day 7 Observations		Date: 1/21/19		Technician: KO			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	NF
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460		
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	19-75
TEST START DATE	1/14/19	WEIGHING DATE:	1/23/19
TEST END DATE	1/21/19		
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	TBP	ANALYST-FINAL WEIGHTS	TBP

Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
NEB Lab Synthetic Diluent	A	935.52	940.70
	B	938.71	944.46
	C	940.30	945.78
	D	929.83	934.14
Reedy Meadow Brook Control	A	930.74	936.09
	B	928.28	933.62
	C	930.16	936.14
	D	937.78	943.68
6.25%	A	932.58	938.24
	B	935.76	942.07
	C	932.12	938.42
	D	932.41	938.43
12.5%	A	928.86	935.29
	B	924.69	930.89
	C	930.79	935.76
	D	932.33	937.53
25%	A	935.31	941.05
	B	932.73	938.65
	C	932.88	938.58
	D	931.74	937.92
50%	A	926.06	931.96
	B	933.80	939.46
	C	932.54	938.02
	D	933.91	939.78
91%	A	934.78	940.31
	B	932.70	938.70
	C	931.80	937.29
	D	928.68	934.19
100%	A	927.06	932.28
	B	930.65	935.66
	C	931.37	935.58
	D	939.22	944.25

Concentration	Rep	Final Weight (mg)	Initial Weight (mg)	Total Weight (mg)	Average per fish (mg)	Mean fish weight (mg)	Standard Deviation
NEB Lab Synthetic Diluent	1	940.70	935.52	5.18	0.518	0.5180	0.062498
	2	944.46	938.71	5.75	0.575		
	3	945.78	940.30	5.48	0.548		
	4	934.14	929.83	4.31	0.431		
Reedy Meadow Brook Control	1	936.09	930.74	5.35	0.535	0.5643	0.03450966
	2	933.62	928.28	5.34	0.534		
	3	936.14	930.16	5.98	0.598		
	4	943.68	937.78	5.90	0.590		
6.25%	1	938.24	932.58	5.66	0.566	0.6072	0.030609095
	2	942.07	935.76	6.31	0.631		
	3	938.42	932.12	6.30	0.630		
	4	938.43	932.41	6.02	0.602		
12.5%	1	935.29	928.86	6.43	0.643	0.5700	0.072244954
	2	930.89	924.69	6.20	0.620		
	3	935.76	930.79	4.97	0.497		
	4	937.53	932.33	5.20	0.520		
25%	1	941.05	935.31	5.74	0.574	0.5885	0.021870833
	2	938.65	932.73	5.92	0.592		
	3	938.58	932.88	5.70	0.570		
	4	937.92	931.74	6.18	0.618		
50%	1	931.96	926.06	5.90	0.590	0.5728	0.019653244
	2	939.46	933.80	5.66	0.566		
	3	938.02	932.54	5.48	0.548		
	4	939.78	933.91	5.87	0.587		
91%	1	940.31	934.78	5.53	0.553	0.5633	0.024554361
	2	938.70	932.70	6.00	0.600		
	3	937.29	931.80	5.49	0.549		
	4	934.19	928.68	5.51	0.551		
100%	1	932.28	927.06	5.22	0.522	0.4868	0.044843245
	2	935.66	930.65	5.01	0.501		
	3	935.58	931.37	4.21	0.421		
	4	944.25	939.22	5.03	0.503		

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	18-0978-6005	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	11-9293-2994	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	14 Jan-19 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	21 Jan-19 13:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-1924-9610	**Code:**	42B664CA	**Project:**	
Sample Date:	14 Jan-19 07:30	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	14 Jan-19 11:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1536735	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

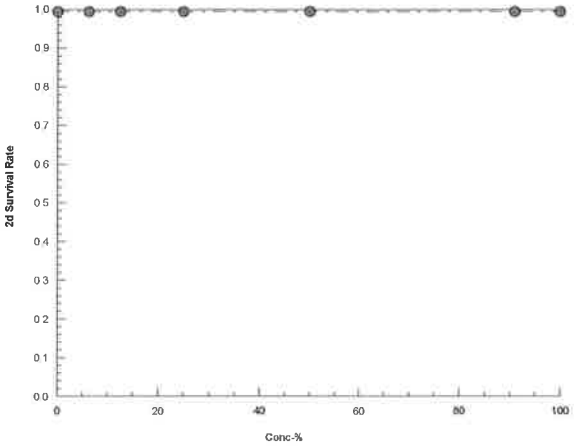
2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	18-0978-6005	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	11-1187-6749	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	11-9293-2994	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	14 Jan-19 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	21 Jan-19 13:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-1924-9610	**Code:**	42B664CA	**Project:**	
Sample Date:	14 Jan-19 07:30	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	14 Jan-19 11:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	639239	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.85	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	0.8500	0.6000	1.0000	0.1915	22.53%	0.0%	34/40	0.9607	0.0%
6.25		4	0.9750	0.9000	1.0000	0.0500	5.13%	-14.71%	39/40	0.9607	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	-17.65%	40/40	0.9607	0.0%
25		4	0.9500	0.9000	1.0000	0.0577	6.08%	-11.76%	38/40	0.9607	0.0%
50		4	0.9750	0.9000	1.0000	0.0500	5.13%	-14.71%	39/40	0.9607	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	-17.65%	40/40	0.9607	0.0%
100		4	0.9750	0.9000	1.0000	0.0500	5.13%	-14.71%	39/40	0.9607	0.0%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.8000	1.0000	1.0000	0.6000
6.25		0.9000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	0.9000	0.9000	1.0000
50		0.9000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		0.9000	1.0000	1.0000	1.0000

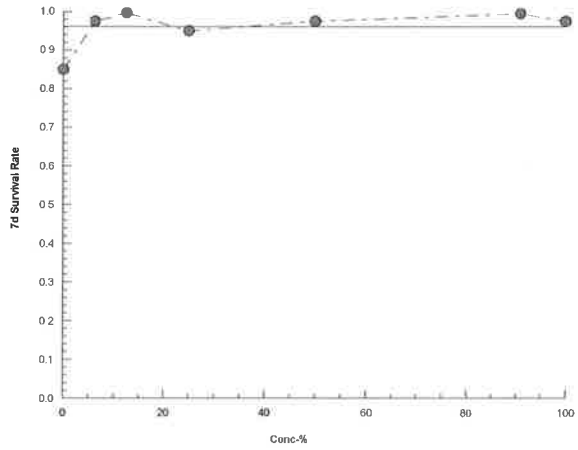
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	11-1187-6749	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	20-3711-2696	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:24	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	11-9293-2994	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	14 Jan-19 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	21 Jan-19 13:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-1924-9610	**Code:**	42B664CA	**Project:**	
Sample Date:	14 Jan-19 07:30	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	14 Jan-19 11:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1857674	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.518	0.25	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Biomass-mg Summary

			Calculated Variate						Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	D	4	0.518	0.431	0.575	0.0625	12.07%	0.0%	0.5713	0.0%
6.25		4	0.6072	0.566	0.631	0.03061	5.04%	-17.23%	0.5713	0.0%
12.5		4	0.57	0.497	0.643	0.07224	12.67%	-10.04%	0.5713	0.0%
25		4	0.5885	0.57	0.618	0.02187	3.72%	-13.61%	0.5713	0.0%
50		4	0.5728	0.548	0.59	0.01965	3.43%	-10.57%	0.5713	0.0%
91		4	0.5632	0.549	0.6	0.02455	4.36%	-8.74%	0.5632	1.41%
100		4	0.4868	0.421	0.522	0.04484	9.21%	6.03%	0.4868	14.8%

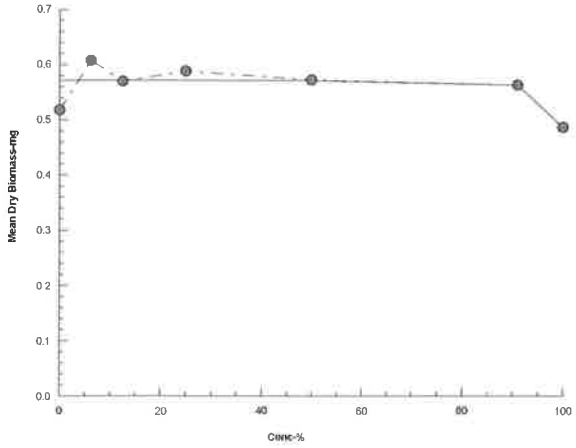
Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.518	0.575	0.548	0.431
6.25		0.566	0.631	0.63	0.602
12.5		0.643	0.62	0.497	0.52
25		0.574	0.592	0.57	0.618
50		0.59	0.566	0.548	0.587
91		0.553	0.6	0.549	0.551
100		0.522	0.501	0.421	0.503

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	20-3711-2696	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:24	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	10-7186-7936	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Batch ID:	11-9293-2994	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	14 Jan-19 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	21 Jan-19 13:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-1924-9610	**Code:**	42B664CA	**Project:**	
Sample Date:	14 Jan-19 07:30	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	14 Jan-19 11:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	>100	n/a	1	16.35%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	21	10	2	6	Asymp	0.9831	Non-Significant Effect
		12.5	22	10	2	6	Asymp	0.9934	Non-Significant Effect
		25	20	10	2	6	Asymp	0.9616	Non-Significant Effect
		50	21	10	2	6	Asymp	0.9831	Non-Significant Effect
		91	22	10	2	6	Asymp	0.9934	Non-Significant Effect
		100	21	10	2	6	Asymp	0.9831	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.85	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.122318	0.0203863	6	1.511	0.2230	Non-Significant Effect
Error	0.283314	0.0134911	21			
Total	0.405632		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	10.34	3.812	2.3E-05	Unequal Variances
Variances	Mod Levene Equality of Variance Test	4.44	3.812	0.0047	Unequal Variances
Distribution	Shapiro-Wilk W Normality Test	0.8806	0.8975	0.0041	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.8500	0.5453	1.0000	0.9000	0.6000	1.0000	0.0957	22.53%	0.00%
6.25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-14.71%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-17.65%
25		4	0.9500	0.8581	1.0000	0.9500	0.9000	1.0000	0.0289	6.08%	-11.76%
50		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-14.71%
91		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-17.65%
100		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-14.71%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.204	0.7966	1.612	1.26	0.8861	1.412	0.1281	21.28%	0.00%
6.25		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	-13.86%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-17.25%
25		4	1.331	1.181	1.48	1.331	1.249	1.412	0.04705	7.07%	-10.48%
50		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	-13.86%
91		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-17.25%
100		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	-13.86%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	10-7186-7936	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.8000	1.0000	1.0000	0.6000
6.25		0.9000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	0.9000	0.9000	1.0000
50		0.9000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		0.9000	1.0000	1.0000	1.0000

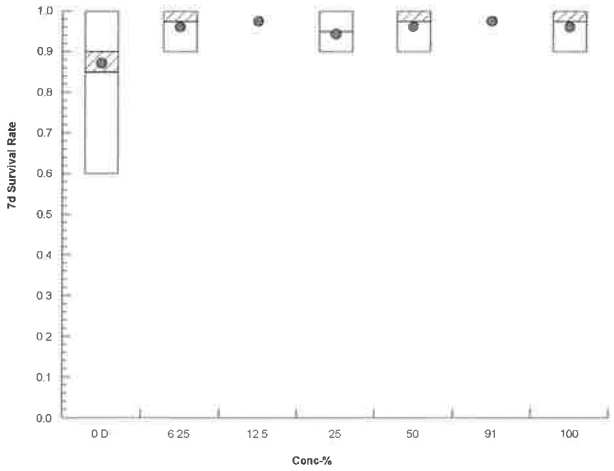
Angular (Corrected) Transformed Detail

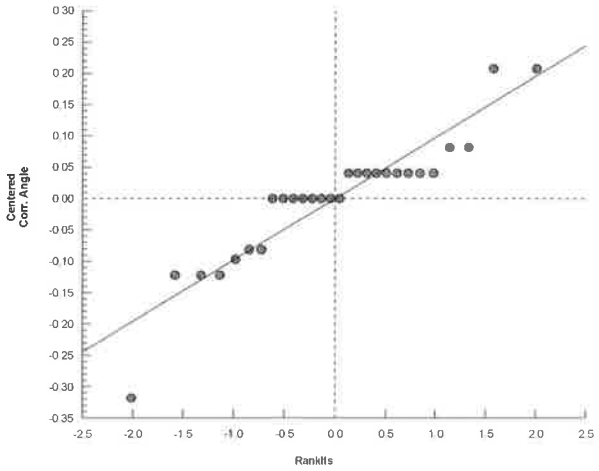
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.107	1.412	1.412	0.8861
6.25		1.249	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.412	1.249	1.249	1.412
50		1.249	1.412	1.412	1.412
91		1.412	1.412	1.412	1.412
100		1.249	1.412	1.412	1.412

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	8/10	10/10	10/10	6/10
6.25		9/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	9/10	9/10	10/10
50		9/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		9/10	10/10	10/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	10-0220-1121	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	11-9293-2994	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	14 Jan-19 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	21 Jan-19 13:50	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	11-1924-9610	**Code:**	42B664CA	**Project:**	
Sample Date:	14 Jan-19 07:30	**Material:**	WWTF Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	14 Jan-19 11:35	**CAS (PC):**		**Station:**	
Sample Age:	7h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	100	>100	n/a	1	14.70%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	-2.87	2.448	0.076	6	CDF	1.0000	Non-Significant Effect
		12.5	-1.672	2.448	0.076	6	CDF	0.9984	Non-Significant Effect
		25	-2.267	2.448	0.076	6	CDF	0.9998	Non-Significant Effect
		50	-1.761	2.448	0.076	6	CDF	0.9988	Non-Significant Effect
		91	-1.455	2.448	0.076	6	CDF	0.9968	Non-Significant Effect
		100	1.005	2.448	0.076	6	CDF	0.4516	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.518	0.25	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0416857	0.0069476	6	3.592	0.0131	Significant Effect
Error	0.0406218	0.0019344	21			
Total	0.0823075		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.425	16.81	0.2086	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9734	0.8975	0.6747	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.518	0.4186	0.6175	0.533	0.431	0.575	0.03125	12.07%	0.00%
6.25		4	0.6072	0.5585	0.656	0.616	0.566	0.631	0.0153	5.04%	-17.23%
12.5		4	0.57	0.455	0.685	0.57	0.497	0.643	0.03612	12.67%	-10.04%
25		4	0.5885	0.5537	0.6233	0.583	0.57	0.618	0.01094	3.72%	-13.61%
50		4	0.5728	0.5415	0.604	0.5765	0.548	0.59	0.009827	3.43%	-10.57%
91		4	0.5632	0.5242	0.6023	0.552	0.549	0.6	0.01228	4.36%	-8.74%
100		4	0.4868	0.4154	0.5581	0.502	0.421	0.522	0.02242	9.21%	6.03%

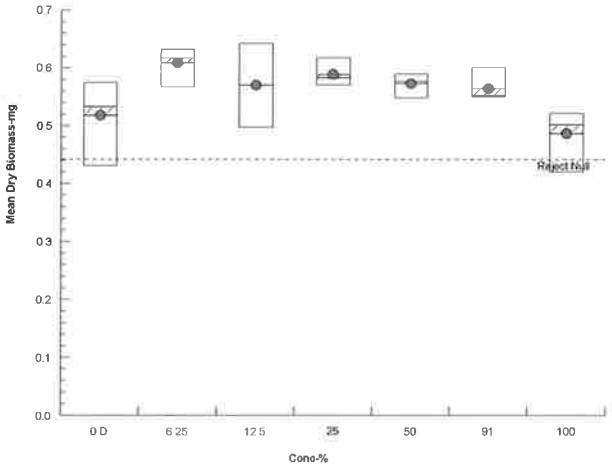
Mean Dry Biomass-mg Detail

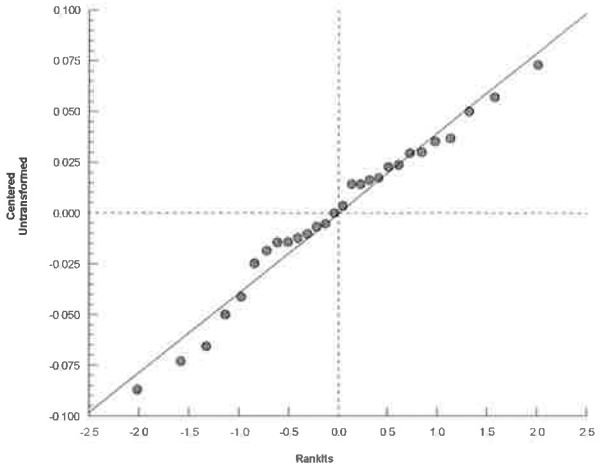
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.518	0.575	0.548	0.431
6.25		0.566	0.631	0.63	0.602
12.5		0.643	0.62	0.497	0.52
25		0.574	0.592	0.57	0.618
50		0.59	0.566	0.548	0.587
91		0.553	0.6	0.549	0.551
100		0.522	0.501	0.421	0.503

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	10-0220-1121	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	24 Jan-19 14:23	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

Graphics





NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			1/14/19 TIME:	1400
ANALYST	MM	CH	MM	MM	PD	MM	MM	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.8	24.0	25.2	25.7	25.6	25.1	25.8	
D.O. mg/L Initial	8.1	9.0	8.3	8.2	8.2	8.2	7.9	
pH s.u. Initial	7.7	7.2	7.2	7.8	7.8	7.2	7.4	
Conductivity µS Initial	182	182	185	184	183	185	186	
Temp °C Final	25.2	24.8	24.6	24.7	24.9	24.9	25.4	
D.O. mg/L Final	7.8	7.2	7.4	7.5	7.3	7.1	7.0	
pH s.u. Final	7.1	7.1	7.2	7.6	7.8	7.1	7.3	
Conductivity µS Final	190	186	188	187	191	192	188	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.6	26.0	24.5	24.4	25.4	24.6	25.3	
D.O. mg/L Initial	9.2	9.2	9.8	9.4	8.8	9.5	8.8	
pH s.u. Initial	6.6	6.8	6.7	6.8	7.3	6.5	6.6	
Conductivity µS Initial	193	194	188	187	186	187	188	
Temp °C Final	25.1	24.6	24.2	24.4	24.7	24.6	25.1	
D.O. mg/L Final	7.7	7.0	8.2	7.7	7.3	7.1	7.1	
pH s.u. Final	6.9	7.1	7.2	7.4	7.4	7.0	7.1	
Conductivity µS Final	204	200	195	192	195	195	191	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.3	24.0	25.2	25.7	25.7	25.3	25.5	
D.O. mg/L Initial	8.3	9.0	8.3	8.3	8.2	8.3	8.0	
pH s.u. Initial	8.2	8.0	8.3	8.3	8.4	8.2	8.3	
Conductivity µS Initial	329	324	330	340	346	349	349	
Temp °C Final	25.6	25.3	24.9	24.8	25.0	24.5	25.0	
D.O. mg/L Final	7.6	6.6	7.3	7.2	7.4	7.3	7.7	
pH s.u. Final	7.6	7.4	7.7	7.9	7.8	8.0	7.7	
Conductivity µS Final	331	328	333	342	354	359	352	
12.5%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.4	24.0	25.1	25.8	25.7	25.1	25.4	
D.O. mg/L Initial	8.3	9.0	8.3	8.3	8.2	8.3	8.0	
pH s.u. Initial	8.3	8.2	8.5	8.5	8.6	8.4	8.5	
Conductivity µS Initial	476	471	505	498	501	498	498	
Temp °C Final	25.1	25.4	24.9	25.3	24.9	24.5	24.2	
D.O. mg/L Final	7.7	6.9	7.3	7.3	7.4	7.4	7.4	
pH s.u. Final	8.0	7.9	8.2	8.4	8.2	8.3	8.2	
Conductivity µS Final	480	476	510	504	516	515	507	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			1/14/19 TIME:	1400
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.1	24.0	25.0	25.8	26.0	25.1	25.4	
D.O. mg/L Initial	8.6	9.1	8.7	8.5	8.2	8.5	8.2	
pH s.u. Initial	8.4	8.4	8.6	8.6	8.7	8.5	8.6	
Conductivity µS Initial	757	769	784	781	785	809	789	
Temp °C Final	24.9	25.5	24.7	25.1	24.8	24.3	24.1	
D.O. mg/L Final	7.7	6.5	7.3	7.5	7.5	7.4	7.5	
pH s.u. Final	8.3	8.2	8.5	8.6	8.5	8.6	8.5	
Conductivity µS Final	754	774	792	789	808	834	814	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.0	24.0	25.0	25.8	26.0	25.2	25.3	
D.O. mg/L Initial	9.2	9.3	9.1	8.8	8.3	8.9	8.4	
pH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.6	
Conductivity µS Initial	1,329	1,337	1,375	1,393	1,388	1,406	1,408	
Temp °C Final	25.0	25.5	24.9	25.1	24.8	24.4	24.0	
D.O. mg/L Final	7.9	6.5	7.3	7.4	7.5	7.1	7.4	
pH s.u. Final	8.5	8.4	8.7	8.8	8.7	8.7	8.7	
Conductivity µS Final	1,310	1,343	1,381	1,397	1,419	1,442	1,431	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.6	24.5	24.5	25.8	26.0	24.9	24.9	
D.O. mg/L Initial	10.1	9.6	10.2	9.3	8.5	9.8	8.8	
pH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.5	
Conductivity µS Initial	2,216	2,222	2,330	2,318	2,285	2,351	2,346	
Temp °C Final	25.4	24.8	24.7	25.4	24.9	24.3	25.0	
D.O. mg/L Final	7.7	7.2	7.2	7.3	7.3	7.2	7.0	
pH s.u. Final	8.6	8.7	8.8	8.9	8.8	8.8	8.8	
Conductivity µS Final	2,174	2,236	2,350	223	2,338	2,385	2,355	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.0	24.7	24.5	25.8	26.0	24.3	24.6	
D.O. mg/L Initial	11.1	10.2	11.3	10.0	8.8	10.7	9.5	
pH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.5	
Conductivity µS Initial	2,416	2,423	2,519	2,506	2,503	2,561	2,565	
Temp °C Final	25.7	25.2	24.8	25.3	25.0	24.9	25.4	
D.O. mg/L Final	8.0	7.2	7.5	7.4	7.4	7.2	7.2	
pH s.u. Final	8.6	8.7	8.8	8.9	8.8	8.8	8.8	
Conductivity µS Final	2,385	2,426	2,532	2,516	2,546	2,591	2,560	

Table of Random Permutations of 16

P.promelas Test ID# 19-75

7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	13	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	13	4	3	10	4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15	2	1	13	12	16	3	4	8	10	1	15	5	14	12	14	12	3	2
12	10	7	12	9	11	9	8	12	14	15	4	11	8	16	8	9	14	14	1
15	7	5	2	10	7	8	12	6	15	6	13	16	12	15	4	11	8	12	6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	6	4	11	2	11	3	7	11	16

Conc Reps

11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	10	14	15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13	6	4	1	16
8	6	3	9	4	10	6	4	16	2	2	9	8	16	4	6	5	15	7	8
9	15	12	10	3	2	12	6	1	15	4	13	7	7	9	12	14	8	8	11
3	10	11	12	13	12	5	11	7	8	9	5	14	11	10	1	3	13	3	5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
1	14	14	2	9	15	16	14	6	14	7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8	1	13	6	3	3	15	9	9	12
15	5	1	11	10	6	3	7	10	5	5	11	10	10	12	15	16	14	5	2
5	3	5	6	7	7	13	2	14	3	16	4	5	5	13	4	9	16	2	6
12	7	15	15	15	9	8	12	12	13	15	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10

1	6	7	4	8	6	5	2	8	15	4	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	2	15	7	9	8	16	1	14	3
10	16	4	5	12	9	16	11	7	1	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	15	5	12	5	7	16	5	11	8	1
7	3	13	14	15	2	1	14	16	5	14	9	2	16	1	12	6	14	4	13
16	11	2	1	14	16	6	9	3	4	16	14	3	15	11	11	3	9	12	5
3	10	16	16	13	7	13	1	11	14	9	10	16	2	10	2	10	7	10	16
11	13	9	13	4	13	8	3	5	13	10	12	5	12	5	14	13	16	5	6
15	2	3	12	9	12	2	4	13	10	3	13	14	4	2	1	14	8	6	12
14	1	14	6	10	1	3	12	4	2	2	4	13	3	16	9	9	3	7	14
13	12	5	11	3	11	15	8	2	7	11	7	8	14	6	4	4	4	15	11
12	5	10	7	2	14	7	15	14	16	13	1	9	10	12	10	11	10	9	8
8	9	8	10	6	4	11	7	10	11	6	8	4	9	8	15	8	6	11	9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2

13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	16	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	12	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9	3	3	7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4	9	13	13	6	8	15	9	1	14
4	10	3	16	2	11	7	9	6	9	1	8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4	2	16	5	8	1	9	5	12	16	6
9	7	14	2	6	4	14	10	9	8	15	10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6	3	10	13	12	9	6	2	15	7	15	7	13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.

PHOENIX
Environmental Laboratories, Inc.

Friday, January 18, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCC28401
Sample ID#s: CC28401 - CC28404

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 18, 2019

SDG I.D.: GCC28401

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFFLUENT-1 C39-1123	CC28401	WASTE WATER
RECEIVING WATER-1 C39-1124	CC28402	WASTE WATER
EFFLUENT GRAB-1	CC28403	WASTE WATER
SRCF LAB WATER C39-1125	CC28404	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 18, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/14/19	7:30
Location Code:	NEB	Received by:	SW	01/14/19	15:06
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC28401
Phoenix ID: CC28401

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT-1 C39-1123

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.022	0.005	mg/L	1	01/16/19	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B
Copper	0.0019	0.0010	mg/L	1	01/16/19	CPP	E200.7
Hardness (CaCO3)	108	0.1	mg/L	1	01/18/19		E200.7
Nickel	0.006	0.001	mg/L	1	01/16/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B
Zinc	0.018	0.002	mg/L	1	01/16/19	CPP	E200.7
Alkalinity-CaCO3	1130	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11
Conductivity	2220	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1
Tot. Diss. Solids	1500	20	mg/L	2	01/15/19	MM/DA	SM2540C-11
Tot. Org. Carbon	4.9	0.50	mg/L	1	01/15/19	RWR	SM5310B-11
Total Solids	1500	20	mg/L	2	01/15/19	MM/DA	SM2540B-11
Total Metals Digestion	Completed				01/15/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 18, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 18, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/14/19	7:00
Location Code:	NEB	Received by:	SW	01/14/19	15:06
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC28401
Phoenix ID: CC28402

Project ID: PATRIOT BEVERAGES
Client ID: RECEIVING WATER-1 C39-1124

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.098	0.005	mg/L	1	01/16/19	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B
Copper	0.0011	0.0010	mg/L	1	01/16/19	CPP	E200.7
Hardness (CaCO3)	35.3	0.1	mg/L	1	01/18/19		E200.7
Nickel	0.002	0.001	mg/L	1	01/16/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B
Zinc	0.006	0.002	mg/L	1	01/16/19	CPP	E200.7
Alkalinity-CaCO3	24.2	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11
Conductivity	191	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1
pH	7.01	1.00	pH Units	1	01/15/19 03:52	RR/EG	SM4500-H B-11
Tot. Org. Carbon	4.83	0.50	mg/L	1	01/15/19	RWR	SM5310B-11
Total Metals Digestion	Completed				01/15/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
January 18, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 18, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/14/19	7:30
Location Code:	NEB	Received by:	SW	01/14/19	15:06
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC28401
Phoenix ID: CC28403

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.03	0.02	mg/L	1	01/14/19 18:33	O	SM4500CLG-97
pH	8.61	1.00	pH Units	1	01/15/19 03:54	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
January 18, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 18, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/14/19	8:50
Location Code:	NEB	Received by:	SW	01/14/19	15:06
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC28401
Phoenix ID: CC28404

Project ID: PATRIOT BEVERAGES
Client ID: SRCF LAB WATER C39-1125

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.010	0.005	mg/L	1	01/16/19	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B
Copper	< 0.0010	0.0010	mg/L	1	01/16/19	CPP	E200.7
Hardness (CaCO3)	50.3	0.1	mg/L	1	01/18/19		E200.7
Nickel	< 0.001	0.001	mg/L	1	01/16/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B
Zinc	0.002	0.002	mg/L	1	01/16/19	CPP	E200.7
Alkalinity-CaCO3	44.2	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11
Conductivity	177	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1
pH	8.08	1.00	pH Units	1	01/15/19 04:00	RR/EG	SM4500-H B-11
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	01/15/19	RWR	SM5310B-11
Total Metals Digestion	Completed				01/15/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 18, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 18, 2019

QA/QC Data

SDG I.D.: GCC28401

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 463425 (mg/L), QC Sample No: CC29016 (CC28401, CC28402, CC28404)														
Cadmium - Water	BRL	0.0001	<0.0001	<0.0001	NC	109			107			75 - 125	20	
QA/QC Batch 463425 (mg/L), QC Sample No: CC29016 (CC28401, CC28402, CC28404)														
Lead (Furnace) - Water	BRL	0.001	<0.0003	<0.001	NC	99.7			98.2			75 - 125	30	
QA/QC Batch 463412 (mg/L), QC Sample No: CC28192 (CC28401, CC28402, CC28404)														
ICP Metals - Aqueous														
Aluminum	BRL	0.0050	1.71	1.63	4.80	101			>130			75 - 125	20	m
Copper	BRL	0.0025	0.068	0.0671	1.30	99.6			103			75 - 125	20	
Nickel	BRL	0.0005	0.003	0.0031	NC	102			98.0			75 - 125	20	
Zinc	BRL	0.0020	0.127	0.123	3.20	101			96.1			75 - 125	20	

m = This parameter is outside laboratory MS/MSD specified recovery limits.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 18, 2019

QA/QC Data

SDG I.D.: GCC28401

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463338 (mg/L), QC Sample No: CC27856 (CC28401)													
Tot. Diss. Solids	BRL	10	2100	2000	4.90	105						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463353 (mg/L), QC Sample No: CC28229 (CC28401, CC28402, CC28404)													
Alkalinity-CaCO3	BRL	5.00	81	81	NC	109						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463361 (umhos/cm), QC Sample No: CC28229 (CC28401, CC28402, CC28404)													
Conductivity	BRL	5.00	447	453	1.30	97.4						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463349 (pH), QC Sample No: CC28229 (CC28402, CC28403, CC28404)													
pH			7.71	7.78	0.90	97.5						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463339 (mg/L), QC Sample No: CC28401 (CC28401)													
Total Solids	BRL	10	1500	1500	0	99.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463619 (mg/L), QC Sample No: CC29528 (CC28402, CC28404)													
Total Organic Carbon	BRL	1.0	2.5	2.4	NC	104			92.0			85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463289 (mg/L), QC Sample No: CC27863 (CC28401, CC28402, CC28404)													
Ammonia as Nitrogen	BRL	0.05	0.41	0.40	2.50	101			90.8			90 - 110	20
QA/QC Batch 463295 (mg/L), QC Sample No: CC28179 (CC28403)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	103							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
January 18, 2019

Friday, January 18, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCC28401 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

January 18, 2019 SDG I.D.: GCC28401

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

WCIP

PHOENIX *Environmental Laboratories, Inc.*

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 2 Pg ___ of ___

Data Delivery (check one):
☐ Fax #: ___
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22403
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature ___ Date ___

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (–)	Total Residual Chlorine (0.02 mg/L)	Hardness	Alkalinity	Specific conductance	Total solids	Total dissolved solids	TOC	Cd(AA), Pb(AA), Cu, Zn, Ni, Al		Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As Is 250 ml	PL As Is 120ml	GL Amber 250ml 8oz	PL As is 1000ml 500mL	PL H2SO4 [X] 250ml [ ] 1000ml H2SO4 + H3PO4	PL HNO3 [X] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
28401	Effluent-2 #1 C39-1123	WW	1/13-14/19	0700-0730	X			X	X	X	X	X	X	X						1	1	1	1		
28402	C39-1124 Receiving Water-2 #1	O	1/14/19	0700	X	X		X	X	X			X	X						1	1	1	1		
28403	Effluent Grab - 2 #1	WW	1/14/19	0730		X	X											1							
28404	SRCF lab water (C39-1125)	O	1/14/19	0850	X	X		X	X	X			X	X						1	1	1	1		

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	1-14-19	1440
[signature]	[signature]	1-14-19	1500

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above
Cd - 0.0005 mg/L; Pb - 0.0005 mg/L; Cu - 0.003 mg/L; Zn - 0.005 mg/L
Ni - 0.005 mg/L; Al - 0.02 mg/L
Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

PHOENIX
Environmental Laboratories, Inc.

Tuesday, January 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES MA
SDG ID: GCC30207
Sample ID#s: CC30207 - CC30209

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 22, 2019

SDG I.D.: GCC30207

Project ID: PATRIOT BEVERAGES MA

Client Id	Lab Id	Matrix
EFFLUENT-2 EFF-C39-1154	CC30207	WASTE WATER
RECEIVING WATER-2 C39-1155	CC30208	WASTE WATER
EFFLUENT GRAB-2	CC30209	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/16/19	7:00
Location Code:	NEB	Received by:	SW	01/16/19	16:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC30207
Phoenix ID: CC30207

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT-2 EFF-C39-1154

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.07	0.05	mg/L	1	01/18/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/16/19	7:00
Location Code:	NEB	Received by:	SW	01/16/19	16:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC30207
Phoenix ID: CC30208

Project ID: PATRIOT BEVERAGES MA
Client ID: RECEIVING WATER-2 C39-1155

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/18/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/16/19	7:00
Location Code:	NEB	Received by:	SW	01/16/19	16:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC30207
Phoenix ID: CC30209

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT GRAB-2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.02	0.02	mg/L	1	01/16/19 20:03	O	SM4500CLG-97
pH	8.65	1.00	pH Units	1	01/17/19 06:29	RWR	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 22, 2019

QA/QC Data

SDG I.D.: GCC30207

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463766 (pH), QC Sample No: CC29968 (CC30209)													
pH			7.53	7.58	0.70	97.6						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 463844 (mg/L), QC Sample No: CC29966 (CC30207, CC30208)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	95.5			91.5			90 - 110	20
QA/QC Batch 463631 (mg/L), QC Sample No: CC29656 (CC30209)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	100							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
January 22, 2019

Tuesday, January 22, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCC30207 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

January 22, 2019 SDG I.D.: GCC30207

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

WUP

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 2.1 Pg of

Data Delivery (check one):
- [ ] Fax #:
- [x] Email: kimberly.wills@gza.com

Format: [ ] Excel [ ] Pdf [ ] Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22403
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature ______ Date ______

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (--)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
30207	Effluent-2	WW	1/15/19 - 1/16/19	0700 - 0700	X									1			
30208	Receiving Water-2	O	1/16/19	0700	X									1			
30209	Effluent Grab - 2		1/16/19	0700		X	X			1							
	Eff - C39-1154																
	Riv - C39-1155																

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	1-16-19	1330
[signature]	[signature]	1-16-19	1624

Turnaround:
- [ ] 1 Day*
- [ ] 2 Days*
- [ ] 3 Days*
- [x] Standard
- [ ] Other

* Surcharge Applies

Requirements for CT
- [ ] Res. Criteria
- [ ] GW Protection
- [ ] GA Mobility
- [ ] GB Mobility
- [ ] SW Protection
- [ ] Res. Vol.
- [ ] Ind. Vol.

Requirements for MA
- [ ] GW-1
- [ ] GW-2
- [ ] GW-3
- [ ] S-1
- [ ] S-2
- [ ] S-3
- [ ] MCP Certification
- [ ] Other

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

PHOENIX
Environmental Laboratories, Inc.

Tuesday, January 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCC32049
Sample ID#s: CC32049 - CC32051

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

January 22, 2019

SDG I.D.: GCC32049

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFFLUENT 3 C39-1187	CC32049	WASTE WATER
RECEIVING WATER 3 C39-1188	CC32050	WASTE WATER
EFFLUENT GRAB 3	CC32051	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/18/19	7:00
Location Code:	NEB	Received by:	LB	01/18/19	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC32049
Phoenix ID: CC32049

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT 3 C39-1187

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/22/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/18/19	7:30
Location Code:	NEB	Received by:	LB	01/18/19	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC32049
Phoenix ID: CC32050

Project ID: PATRIOT BEVERAGES
Client ID: RECEIVING WATER 3 C39-1188

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/22/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

January 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		01/18/19	7:00
Location Code:	NEB	Received by:	LB	01/18/19	15:57
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22403				

Laboratory Data

SDG ID: GCC32049
Phoenix ID: CC32051

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB 3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.04	0.02	mg/L	1	01/18/19 20:28	O	SM4500CLG-97
pH	8.49	1.00	pH Units	1	01/19/19 00:19	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
January 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

January 22, 2019

QA/QC Data

SDG I.D.: GCC32049

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 464067 (pH), QC Sample No: CC32054 (CC32051)													
pH				7.87		97.4						85 - 115	20
QA/QC Batch 464202 (mg/L), QC Sample No: CC31287 (CC32049)													
Ammonia as Nitrogen	BRL	0.05	0.10	0.11	NC	101			97.2			90 - 110	20
QA/QC Batch 464221 (mg/L), QC Sample No: CC31348 (CC32050)													
Ammonia as Nitrogen	BRL	0.05	35.6	35.7	0.30	97.3			98.5			90 - 110	20
Comment:													
TKN is reported as Organic Nitrogen in the Blank, LCS, DUP and MS.													
QA/QC Batch 464032 (mg/L), QC Sample No: CC32185 (CC32051)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	103							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
January 22, 2019

Tuesday, January 22, 2019

Criteria: None

State: CT

Sample Criteria Exceedances Report

GCC32049 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

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ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

January 22, 2019 SDG I.D.: GCC32049

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Wcid

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 2.1 Pg of

Data Delivery (check one):
☐ Fax #:
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22403
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature ____________ Date ______

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (--)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As Is 250 ml	PL As Is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
32049	Effluent-23 C39-1187	WW	1/17-18/19	0700-0700	X									1			
32050	Receiving Water-23 C39-1188	O	1/18/19	0730	X									1			
32051	Effluent Grab -23	WW	1/18/19	0700		X	X			1							

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	1/18/19	1540
[signature]	[signature]	1/18/19	1557

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

SAMPLE RECEIPT CHEMISTRY
&
CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 05.0044697.00

DATE RECEIVED	1/14/19		1/16/19		1/18/19	
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3
COC #	C39-1123	C39-1124	C39-1154	C39-1155	C39-1187	C39-1188
pH (SU)	8.2	6.3	8.2	6.6	8.3	6.5
Temperature (^{o}C)	1.1	0.4	2.7	1.6	2.8	1.5
Dissolved Oxygen (mg/L)	11.5	9.9	12.3	11.7	11.8	11.4
Conductivity (µmhos)	2,439	196	2,542	206	2,600	192
Salinity (ppt)	1	<1	1	<1	1	<1
TRC - DPD (mg/L)	0.029	0.001	0.052	0.007	0.036	0.008
TRC - Amperometric (mg/L)	NA	NA	<0.05	NA	NA	NA
Hardness (mg/L as $CaCO_3$)	102	46	86	32	100	34
Alkalinity (mg/l as $CaCO_3$)	1,010	20	1,045	25	1,070	20
Tech Initials	KO	KO	TBP	TBP	PD	PD

NOTE: NA = NOT APPLICABLE

Data Reviewed By: _____ Date Reviewed: 2/6/19

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #1

EFFLUENT

Sampler: Jm DRAPEAU

Title: CHIEF OPERATOR WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: OUTFALL 001

Start Date: 1/13/19 Time: 0700

End Date: 1/14/19 Time: 0730

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 1/14/19

Time Collected: 0730

Sample Type:

____ Prechlorinated

____ Dechlorinated

✓ Unchlorinated

____ Chlorinated

RECEIVING WATER

Sampler: Jm DRAPEAU

Title: CHIEF OPERATOR WWTP

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 1/14/19

Time Collected: 0700

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 1/14/19	Time: 0830
Received By:	Date: 1/14/19	Time: 0830
Relinquished By:	Date: 1/14/19	Time: 1135
Received By:	Date: 1/14/19	Time: 1135

Optional Information

Purchase Order # to reference on invoice:

Received
ON ICE

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 1.1 °C

Effluent COC# C39-1123

Temperature of Receiving Water Upon Receipt at Lab: 0.4 °C

Receiving Water COC# C39-1124

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #2

EFFLUENT

Sampler: Jim Dyson

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: OUTFALL 001

Start Date: 1/15/19 Time: 0700

End Date: 1/16/19 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 1/16/19

Time Collected: 0700

RECEIVING WATER

Sampler: Jim Dyson

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 1/16/19

Time Collected: 0730

Received
ON ICE

Sample Type:

_____ Prechlorinated
_____ Dechlorinated
X Unchlorinated
_____ Chlorinated

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 1/16/19	Time: 0815
Received By:	Date: 1/16/19	Time: 0815
Relinquished By:	Date: 1/16/19	Time: 1120
Received By: Joseph Bourbeau	Date: 1/16/19	Time: 1147

Optional Information

Purchase Order # to reference on invoice: 0016848

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 2.7 °C

Temperature of Receiving Water Upon Receipt at Lab: 1.6 °C

Effluent COC# C39-1153

Receiving Water COC# C39-1154

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #3

EFFLUENT

Sampler: Jim Drayton
Title: CHIEF OPERATOR WWTP
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: OUTFALL 001
Start Date: 1/17/19 Time: 0700
End Date: 1/18/19 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 1/18/19
Time Collected:

Sample Type:
___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Drayton
Title: CHIEF OPERATOR WWTP
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 1/18/19
Time Collected: 0720

Received
ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 1/18/19	Time: 0740
Received By:	Date: 1/18/19	Time: 0940
Relinquished By:	Date: 1/18/19	Time: 1345
Received By: Pat Jane	Date: 1/18/19	Time: 1345

Optional Information

Purchase Order # to reference on invoice: 00 16848

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 2.8 °C
Effluent COC# C39- 1187

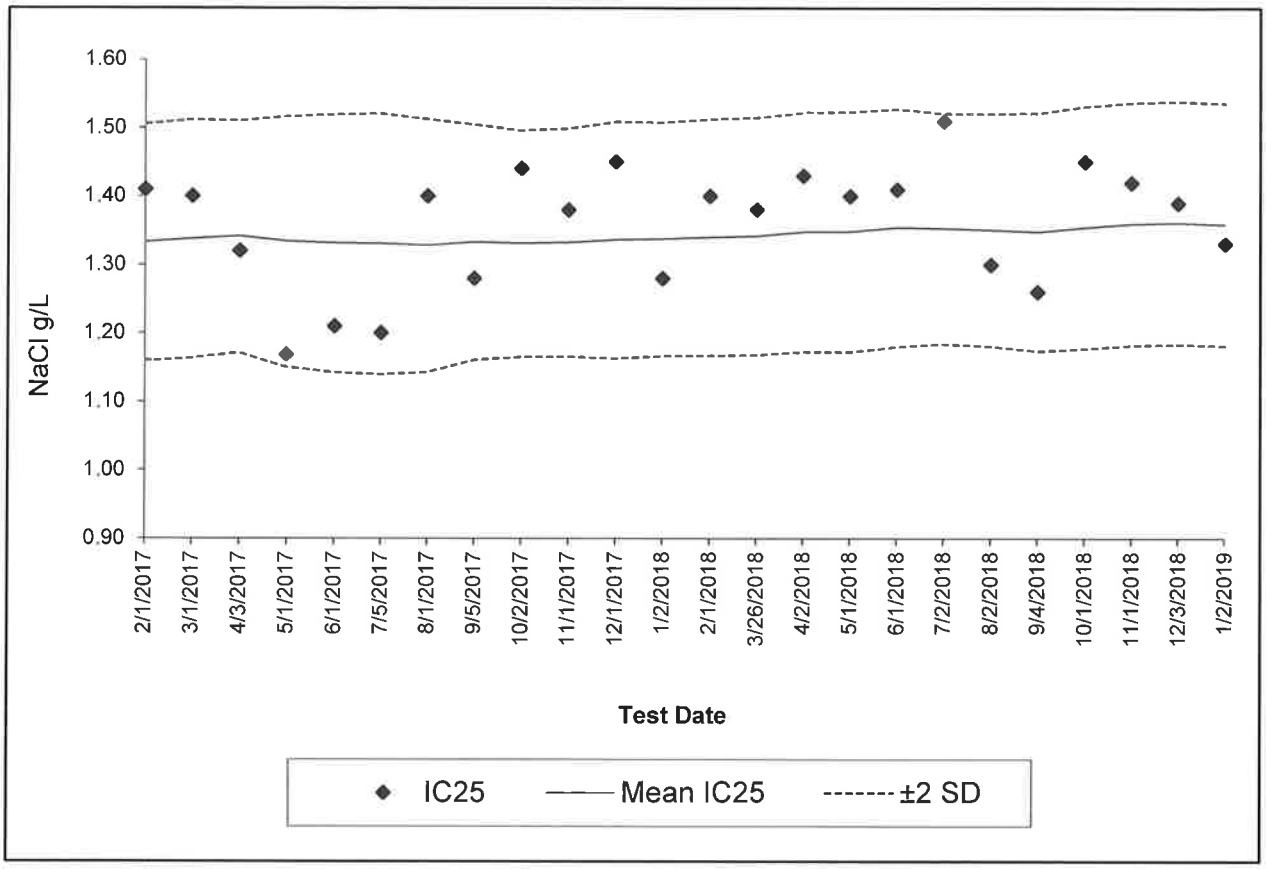
Temperature of Receiving Water Upon Receipt at Lab: 1.5 °C
Receiving Water COC# C39- 1188

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

REFERENCE TOXICANT CHARTS

New England Bioassay

Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC_{25}



Test ID	Date	IC_{25}	Mean IC_{25}	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
17-152	2/1/2017	1.41	1.33	0.09	1.16	1.51	0.06	9.65	9.27
17-268	3/1/2017	1.40	1.34	0.09	1.16	1.51	0.06	20.53	10.07
17-481	4/3/2017	1.32	1.34	0.08	1.17	1.51	0.06	7.47	9.90
17-617	5/1/2017	1.17	1.33	0.09	1.15	1.52	0.07	10.74	9.95
17-765	6/1/2017	1.21	1.33	0.09	1.14	1.52	0.07	7.41	9.80
17-973	7/5/2017	1.20	1.33	0.09	1.14	1.52	0.07	10.39	9.83
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1.33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1.17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1.36	0.09	1.18	1.54	0.07	8.91	11.06

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45
PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%